

Seat  
No.

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मधुर - 051

## Digital Communication Systems (New) (1280)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Assume suitable data if necessary, giving reason.
5. Figures to the right indicate full marks.
6. Draw the neat diagram if necessary.

### UNIT - I

1. Solve **any two** questions.

- a) Explain Random variables and CDF in short. 10
- b) Obtain fourier transfor of a rectangular pulse of duration T and amplitude A. 10
- c) Explain and prove any two properties of Fourier Transform. 10

### UNIT - II

2. Solve **any two** questions.

- a) State and proove sampling theorem. 10
- b) Explain PCM system. 10
- c) Explain ADM in detail. 10

## UNIT - III

3. Solve **any two** questions.
- a) Encode the following data stream into R2, NR2, AMI, Manchester codes.  
Data stream : 11000010. 10
  - b) Explain Bit Synchronizer. 10
  - c) Explain ISI and eye diagram. 10

## UNIT - IV

4. Solve **any two** questions.
- a) Draw QPSK signal for data 10101. 10
  - b) Explain FSK system. 10
  - c) Explain CDMA and TDMA. 10

## UNIT - V

5. Solve **any two** questions.
- a) Explain information entropy, information rate. 10
  - b) Explain syndrome decoding for Block codes. 10
  - c) Explain Basic ARQ system with proper block diagram. 10

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